Continuous Performance Testing for Microservices

HPI Future SOC Lab Day
(Spring 2018)

Research Context

- Modern software engineering paradigms and technologies – such as DevOps and microservices – are gaining more and more attraction
- Established QoS evaluation (e.g., performance and reliability) for “classic” paradigms and technologies exist
- Challenges and lack of adoption for DevOps and microservices
- Our scope: load testing

Project Goals and Activities

- Using BenchFlow for load testing of microservices
- Automatic extraction and evolution of load test specifications from APM Data
- Efficient performance testing of microservices

Use of SOC Lab Resources

- BenchFlow load testing setup on top of Rancher/Docker
- Experimental evaluation of microservice deployment alternatives

Next Steps

DevOps-oriented declarative load testing for microservices

- Declarative load testing
- Detection of performance regressions based on load tests
- Prioritization and selection of load tests
- Advanced extraction of load test specifications from APM data
- Additional Case studies

Selected References

- H. Schulz, T. Angerstein, A. van Hoorn. Towards automating representative load testing in Proc. LTB@ICPE 2018. ACM